

U.S. Patent Application Serial No. 10/691,016  
Reply to Office Action dated May 17, 2005

RECEIVED  
CENTRAL FAX CENTER

AUG 07 2006

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application.

**Listing of Claims:**

1-37. (Cancelled)

38. (Currently Amended) A mechanized method for vineyard cultivation, comprising:

mechanical pruning using a first tool as a ~~mechanical~~ mechanized pruner;

shoot thinning using a second tool as a ~~mechanical~~ mechanized shoot thinner; and

fruit thinning after shoot thinning using a ~~mechanical~~ mechanized fruit thinner;

wherein the first tool, second tool and mechanized fruit thinner are mounted to a vehicle and configured for mechanized pruning, shoot thinning and fruit thinning respectively while the vehicle moves through the vineyard.

39. (Previously Presented) A method according to claim 38, further comprising harvesting using a mechanical harvester.

40. (Previously Presented) A method according to claim 38, wherein the shoot thinning comprises using a striking tool.

41. (Previously Presented) A method according to claim 38, wherein the pruning comprises using a cutting tool.

42. (Previously Presented) A method according to claim 41, wherein the cutting tool comprises a cutting bar.

U.S. Patent Application Serial No. 10/691,016  
Reply to Office Action dated May 17, 2005

43. (Previously Presented) A method according to claim 39, wherein the harvesting comprises using a shaker tool.
44. (Previously Presented) A method according to claim 39, wherein the shoot thinning comprises using a striking tool, wherein the pruning comprises using a cutting tool, and wherein the harvesting comprises using a shaker tool.
45. (Previously Presented) A method according to claim 44, wherein the cutting tool comprises a cutting bar.
46. (Previously Presented) A method according to claim 44, wherein the striking tool comprises a plurality of striker elements.
47. (Currently Amended) A method for vineyard mechanization according to claim 38, further comprising leaf removal, wherein said leaf removal includes using a ~~mechanical~~ mechanized device to remove excess leaves in a fruiting zone.
- 48-50. Cancelled
51. (Previously Presented) A mechanization method according to claim 38, wherein the grapes are trained on single curtain trellis systems, the method further comprising canopy adjustment by removing a portion of the canopy foliage to allow for movement of air and light into a portion of the canopy.
52. (Currently Amended) A mechanization method for grapes trained on GDC trellis and GDC-like canopy systems, comprising:
- pruning during a dormant period using a mechanical pruner;
  - shoot thinning with a mechanical pruner ~~shoot-thinner~~;

U.S. Parent Application Serial No. 10/691,016  
Reply to Office Action dated May 17, 2005

fruit thinning after shoot thinning and before fruit is ready for harvest using a mechanical fruit thinner;

opening centers of a top portion of the vine with a mechanical slapper unit; and

keeping centers clean using a mechanical breaker unit;

wherein the mechanical pruner, mechanical shoot thinner, mechanical fruit thinner, the mechanical slapper unit and the mechanical breaker unit are coupled to a vehicle and configured for mechanical operation while the vehicle moves through the vineyard.

53. (Previously Presented) A mechanization method according to claim 52, further comprising harvesting using mechanical harvester.

54. (Previously Presented) A mechanization method according to claim 52, further comprising shoot positioning using a mechanical shoot positioner to position shoots.

55-57. Cancelled

58. (Currently Amended) A mechanization method for grapes produced on divided canopy trellises, comprising:

summer pruning during a dormant period using a mechanical pruner to cut sides and tops;

shoot thinning during a growing period using a mechanical shoot thinner;

fruit thinning after shoot thinning and before fruit is ready for harvest using a mechanical fruit thinner;

leaf removal using a mechanized leaf removal machine to remove excessive leaves in a fruiting zone on the outside of the canopy; and

U.S. Patent Application Serial No. 10/691,016  
Reply to Office Action dated May 17, 2005

breaking centers open of a top portion of grape plants between divided portions of the divided canopy trellis using a mechanical slapper or breaker device;

wherein the mechanical pruner, mechanical shoot thinner, mechanical fruit thinner, mechanized leaf removal machine and the mechanical slapper or breaker are coupled to a vehicle and configured for mechanical operation while the vehicle moves through the vineyard.

59. (Previously Presented) A mechanization method for grapes according to claim 58, further comprising harvesting using a mechanical harvester.

60-62. Cancelled

63. (Previously Presented) A mechanization method of grapes trained to a high wire single cordon trellis system, comprising:

shoot thinning using a mechanized shoot thinner;

fruit thinning after shoot thinning and before fruit is ready for harvest with a ~~mechanical~~ mechanized hand-held free fruit thinning device;

canopy removal in vigorous, mature vineyards in cool and/or humid regions, by removing the center top with a mechanized slapper unit adapted to remove said top;

minimal pruning using a mechanized pruning unit; and

harvesting using a ~~mechanical~~ mechanized harvester.

64. (Previously Presented) A mechanization method for grapes produced on a California T-trellis, comprising:

dormant pruning using a ~~mechanical~~ mechanized pruner;

U.S. Patent Application Serial No. 10/691,016  
Reply to Office Action dated May 17, 2005

shoot thinning during a growing period using a mechanized shoot thinner;

fruit thinning after shoot thinning and before fruit is ready for harvest with a ~~mechanical~~  
mechanized hand-held free fruit thinner;

early leaf removal to expose fruit to sunlight and acclimate grape skins to sunlight  
exposure using a mechanized leaf remover machine adapted to remove leaves; and

harvesting using a mechanical harvester.

65. (Currently Amended) A mechanization method for grapes produced on vertical  
moveable catch wires, comprising:

dormant pruning using a mechanical pruner;

shoot thinning during a growth period using a mechanical shoot thinner;

fruit thinning after shoot thinning and before fruit is ready for harvest with a mechanical  
fruit thinner device adapted to remove excess fruit;

leaf removal using a machine to remove excessive leaves;

pruning during a growth period with a mechanical pruner unit; and

harvesting using a mechanical harvester;

wherein the mechanical pruner, mechanical shoot thinner, mechanical fruit thinner, leaf  
removal machine, mechanical pruner unit and the mechanical harvester are coupled to a vehicle  
and configured for mechanical operation while the vehicle moves through the vineyard.

66. (Currently Amended) A mechanization method for grapes produced on Smart-Dyson  
Ballerina trellis systems, comprising:

U.S. Patent Application Serial No. 10/691,016  
Reply to Office Action dated May 17, 2005

dormant pruning using a mechanical pruner adapted to prune on the upper part of the ballerina and a pruning unit adapted to prune on the lower part of the ballerina;

shoot thinning during a growth period using a first shoot thinner adapted to shoot thin on the upper part of the ballerina, and using a second shoot thinner adapted to shoot thin on the lower part of the ballerina spaced above the ground if needed;

after shoot thinning and before fruit is ready for harvest, removing any excess fruit from the upper part of the ballerina with a mechanized fruit thinner, any excess fruit on the lower part of the ballerina with a mechanized fruit thinner having different top and bottom settings;

leaf removal using a leaf removal machine adapted to remove leaves on the upper part of the ballerina trellis and using a leaf removal unit on the lower portion to remove leaves;

summer pruning the upper part of the ballerina with a mechanized pruner unit, trimming all shoots on the lower part of the ballerina before harvest with a mechanized pruner unit; and

harvesting with a mechanical harvester.

67. (Withdrawn) A mechanization system for mechanizing a vineyard and which at least substantially maintains fruit quality, comprising:

a dedicated mechanical pruning tool;

a dedicated mechanical shoot thinning tool; and

a dedicated mechanical harvesting tool.

68. (Withdrawn) A system according to claim 67, wherein the shoot thinning tool comprises a striking tool.

U.S. Patent Application Serial No. 10/691,016  
Reply to Office Action dated May 17, 2005

69. (Withdrawn) A system according to claim 68, wherein the striking tool comprises a brush.
70. (Withdrawn) A system according to claim 67, wherein the pruning tool comprises a cutting tool.
71. (Withdrawn) A system according to claim 70, wherein the cutting tool comprises a cutting bar.
72. (Withdrawn) A system according to claim 70, wherein the harvesting tool comprises a shaker tool.
73. (Withdrawn) A system according to claim 70, wherein the shoot thinning tool comprises a striking tool, wherein the pruning tool comprises a cutting tool, and wherein the harvesting tool comprises a shaker tool.
74. (Withdrawn) A system according to claim 73, wherein the cutting tool comprises a cutting bar.
75. (Withdrawn) A system according to claim 73, wherein the striking tool comprises a plurality of striker elements.
- 76-78. Cancelled
79. (Previously Presented) A method according to claim 38, wherein the mechanical pruning is performed during a first period in the vineyard's dormant season, and the mechanical shoot thinning is performed during a second different period in the vineyard's growing season, and the mechanical fruit thinning is performed during a third different period in the vineyard's growing season after shoot thinning.

U.S. Patent Application Serial No. 10/691,016  
Reply to Office Action dated May 17, 2005

80. (Previously Presented) A method according to claim 79, wherein the pruning is performed to remove a predetermined percentage of grapevines canes and/or shoots, and shoot thinning is performed to remove a predetermined percentage of shoots, and fruit thinning is performed to remove a predetermined percentage of fruit.

81. (Previously Presented) A method according to claim 38, wherein pruning and shoot thinning are coordinated to achieve a predetermined node density and yield.

82. (Currently Amended) A method according to claim 38, wherein the shoot thinning removes shoots below the grapevine's cordon and spaced apart from a base of the grapevine.

83. (New) A mechanized method for vineyard cultivation, comprising:

mechanical pruning using a hand-held free first tool as a mechanized pruner;

shoot thinning using a hand-held free second tool as a mechanized shoot thinner; and

fruit thinning after shoot thinning using a hand-held free mechanized fruit thinner.

84. (New) A mechanized method according to claim 83, wherein the first tool, second tool and mechanized fruit thinner are mounted to a vehicle and configured for mechanized pruning, shoot thinning and fruit thinning respectively while the vehicle moves through the vineyard.